Draft Health Advisory for Fish from Trinity Lake and Selected Water Bodies In the Trinity River Watershed (Trinity County)

a fact sheet by
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

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Why has OEHHA developed a draft health advisory for fish from Trinity Lake and selected water bodies in the Trinity River Watershed?

Recent studies by the U.S. Geological Survey and the State Water Resources Control Board indicated that some species of fish in Trinity Lake and other water bodies in the Trinity River watershed contain elevated levels of mercury and could pose a health risk to people who eat them frequently. The Office of Environmental Health Hazard Assessment (OEHHA) has evaluated the health effects of eating fish from Trinity Lake (also known as Clair Engle Lake), the Trinity River, Lewiston Lake, Coffee Creek, Canyon Creek, Eastman Creek, Eastman Dredge Ponds, Carrville Pond, Crow Creek, Tamarack Creek, the New River, and the East Fork Trinity River and its tributaries and has issued a draft report and health advisory with guidelines for the consumption of fish from these water bodies.

OEHHA recommends that individuals limit their consumption of bass, Chinook (King) salmon, white catfish, and other types of fish from Trinity Lake and other listed water bodies in the Trinity River watershed. One set of guidelines applies to women of childbearing age and children age 17 and younger, who are particularly sensitive to methylmercury (the most prevalent and toxic form of mercury in fish). A second set applies to women beyond their childbearing years and men.

Because methylmercury affects neurological development, women of childbearing age and children age 17 and younger should carefully follow guidelines for eating these fish.

Why is mercury found in fish from this region?

Mercury contamination of fish is a global problem. Emissions from volcanoes and coal-burning power plants release mercury into the air where it can be carried worldwide before being deposited in oceans, lakes, and rivers. In northern California water bodies, however, mercury is also a legacy of gold and mercury mining activities that began during the Gold Rush and continued until approximately 1960. Both gold and mercury were mined in the Trinity River watershed and some mercury remains today. The inactive Altoona Mercury Mine is located along the East Fork Trinity River and is reported to contribute significantly to the mercury content of Trinity Lake. Gold miners used mercury to extract gold from mined materials and discharged the waste into streams, where the mercury accumulated in the sediment. Liquid mercury moves relatively slowly through river systems and accumulates in places where sediments are trapped, such as reservoirs. Bacteria convert this inorganic form of mercury into a more toxic, organic form, known as methylmercury, which fish take in from their diet. Methylmercury can accumulate in fish to concentrations many thousands of times greater than mercury levels in the surrounding water. Because methylmercury

accumulates in fish slowly over time, larger fish of a species usually have higher concentrations of methylmercury than smaller fish from the same water body. Predatory fish, such as bass, generally contain more methylmercury than non-predatory fish, such as trout.

What are the human health effects of methylmercury found in these fish?

Developing fetuses and children are especially sensitive to methylmercury. Pregnant women and nursing mothers can pass on methylmercury to their fetuses or infants through the placenta and through breast milk. Excessive exposure to methylmercury can affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, and memory. These effects may occur through adolescence as the nervous system continues to develop. For this reason, a more conservative set of guidelines applies to women of childbearing years and children up to and including age 17.

In adults, the most subtle symptoms of methylmercury toxicity are numbness and tingling sensations in the hands and feet or around the mouth. Other symptoms at higher levels of exposure could include loss of coordination and vision problems.

The levels of methylmercury found in fish from these lakes and rivers should not result in the health effects described above if the proposed guidelines are followed. The extent of health effects depends on the amount of methylmercury that people ingest from the fish that they eat and is also related to a person's body weight.

What are the next steps in OEHHA's evaluation?

OEHHA is seeking public comment on the draft report and advisory guidelines. OEHHA staff scientists will make a presentation, answer questions and accept comments on the draft advisory at a public workshop at 11:30 a.m. on May 3, 2005, at the Victorian Inn Conference Room, 1709 Main Street, Weaverville, California. Written comments can also be sent directly to OEHHA at the address below until May 9, 2005. OEHHA will review all comments before issuing a final report and advisory.

Should I stop eating all fish from these water bodies?

No. Fish are a nutritious part of your diet when eaten in moderate amounts. By following OEHHA's guidelines for eating fish from this region, you can reduce your risk of health effects from exposure to methylmercury.

Because of the increased sensitivity to methylmercury during periods of neurological development, it is particularly important for women of childbearing age and children age 17 and younger to follow the guidance provided. OEHHA offers separate advice for women beyond their childbearing years and adult men.

Additionally, because virtually all ocean and freshwater fish contain some level of methylmercury, OEHHA recommends that women of childbearing age and children aged 17 and younger do not eat shark, swordfish, king mackerel, or tilefish and limit their total consumption of any locally caught sport fish to no more than one meal per week, unless more restrictive advice is already in place. This advice is consistent with recent federal guidance for consumption of commercial and sport fish.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, contact:

Office of Environmental Health Hazard Assessment
Pesticide and Environmental Toxicology Section
P.O. Box 4010, Sacramento, CA 95812-4010
(916) 327-7319 or http://www.oehha.ca.gov

For information on mercury in commercial fish, contact:

U. S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
1 (888) SAFEFOOD or http://www.cfsan.fda.gov

Address written comments to:

Dr. Robert Brodberg
Office of Environmental Health Hazard Assessment
Pesticide and Environmental Toxicology Section
P.O. Box 4010, Sacramento, CA 95812-4010

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Fish Consumption Guidelines*

Type of Fish	Women of childbearing age and children age 17 and younger Eat No More Than:	Women beyond childbearing years and men Eat No More Than:
All Sites, Except Specific Species at Sites Listed Below		
All Bass	Once a Month	Once a Week
Chinook (King) Salmon	Once a Week	3 Times a Week
White Catfish	Once a Week	3 Times a Week
All Trout	Once a Week	3 Times a Week
Other Sport Fish Species including salmon from rivers and creeks below Lewiston Lake	Once a Week	3 Times a Week
Trinity Lake (including rivers and creeks draining into Trinity Lake)		
Chinook (King) Salmon	Once a Month	Once a Week
Lewiston Lake and Carrville Pond		
All Trout	3 Times a Week	3 Times a Week

***MANY OTHER WATER BODIES ARE KNOWN OR SUSPECTED TO HAVE ELEVATED MERCURY LEVELS.** If guidelines are not already in place for the water body where you fish, women of childbearing age and children aged 17 and younger should eat no more than one sport fish meal per week and women beyond childbearing age and men should eat no more than three sport fish meals per week from any location.

EAT SMALLER FISH OF LEGAL SIZE. Fish accumulate mercury as they grow.

DO NOT COMBINE FISH CONSUMPTION ADVICE. If you eat multiple species or catch fish from more than one area, the recommended guidelines for different species and locations should not be combined. For example, if you eat a meal of fish from the one meal per month category, you should not eat another fish species containing mercury for at least one month.

SERVE SMALLER MEALS TO CHILDREN. MEAL SIZE IS ASSUMED TO BE 8 OUNCES FOR A 160-POUND ADULT. If you weigh more or less than 160 pounds, add or subtract 1 oz to your meal size, respectively, for each 20-pound difference in body weight.